3.6 Warm-Up and Cool-Down: Test Pack

AQA 8582 · Calculator allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which part of a warm-up is designed mainly to gradually increase heart rate and blood flow to the muscles?

- ☐ A) Pulse raiser
- ☐ B) Static stretching
- ☐ C) Skill rehearsal
- ☐ D) Cool-down

(Total for Question 1 is 1 mark)

---

2 State one psychological (mental) benefit that a warm-up can give a performer before an important competition, other than a physical change to the body.

(Total for Question 2 is 1 mark)

---

3 Give one suitable pulse-raiser activity a badminton player could use at the start of a warm-up before a match.

(Total for Question 3 is 1 mark)

---

4 A coach is planning an outdoor training session on a very hot afternoon. State two ways the coach should adjust the warm-up because of the hot conditions.

(Total for Question 4 is 2 marks)

© Revision Library | revisionlibrary.co.uk

5 Explain why a cool-down is particularly recommended after a HIGH-intensity training session (such as an anaerobic interval session), but is sometimes considered less essential after a very LOW-intensity session (e.g. a gentle recovery jog).

(Total for Question 5 is 3 marks)

6 State two signs that an athlete might not be sufficiently warmed up before starting intense exercise.

(Total for Question 6 is 2 marks)

7 During the mobility phase of a warm-up, performers usually use dynamic (moving) stretches rather than static (held) stretches. Explain why dynamic stretches are more suitable than static stretches at this point in a warm-up.

(Total for Question 7 is 2 marks)

© Revision Library | revisionlibrary.co.uk

8 Explain how a cool-down can help the body return towards its resting state safely after a hard training session.

(Total for Question 8 is 2 marks)

---

9 Table 2 shows the blood lactate concentration (mmol/l) of a rugby player measured at rest and then after a hard training session, comparing two different post-exercise strategies used on different training days.

Table 2

Time after exercise	Active cool-down (light jogging)	Passive rest (sitting still)
Immediately after	8.0	8.0
10 minutes later	4.0	6.5
20 minutes later	2.0	5.0

(a) Using Table 2, compare how quickly blood lactate concentration fell using the active cool-down compared with passive rest. **(2)**

(b) Explain why the exercise used in an active cool-down should stay light rather than becoming another hard sprint effort. **(2)**

(Total for Question 9 is 4 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 3.6 Warm-Up and Cool-Down: Test Pack

Question 1

A (pulse raiser) **B1**

Answer: A (pulse raiser)

Question 2

mental preparation/focuses the mind on the task ahead/increases confidence/reduces pre-competition anxiety, oe **B1**

Answer: It mentally prepares the performer, helping to focus their mind and increase confidence before competing.

Question 3

any activity that gradually raises heart rate, e.g. light jogging on the spot, shuttle runs/side steps around the court, skipping, oe **B1**

Answer: For example, light jogging on the spot or shuttle runs and side steps around the court.

Question 4

make the pulse-raiser shorter/lower intensity than usual, oe (because body temperature and heart rate will rise more quickly in hot conditions) **B1**

include extra chances to drink water/rest in shade/remove unnecessary layers, oe **B1**

Answer: The coach could make the pulse-raiser shorter or lower intensity than usual, and include extra chances for players to drink water or rest in shade.

Question 5

high-intensity anaerobic work produces more lactic acid/waste products and places more stress on the muscles and cardiovascular system, oe **B1**

so there is more benefit to actively helping remove waste products and gradually lowering heart rate afterward, oe **B1**

a low-intensity session has not stressed the body to the same extent, so the same active-recovery benefit from a cool-down is much smaller, oe **B1**

Answer: High-intensity anaerobic work produces more lactic acid and places more stress on the muscles and cardiovascular system, so there is more benefit to actively helping remove waste products and gradually lower heart rate afterward. A low-intensity session has not stressed the body to the same extent, so the same active-recovery benefit from a cool-down is much smaller.

Question 6

muscles feel stiff or tight, or the athlete's heart/breathing rate is still close to resting, oe **B1**

a reduced range of movement, or a feeling of sluggishness/reduced power in early movements, oe **B1**

Answer: Muscles feel stiff or tight, or heart and breathing rate are still close to resting; and a reduced range of movement, or a feeling of sluggishness in early movements.

Question 7

dynamic stretches move the joints through a full range of motion while keeping the muscles warm and the heart rate raised, oe **B1**

whereas holding a static stretch does not continue to raise heart rate and can allow the muscles to cool slightly, so is more suited to a cool-down, oe **B1**

Answer: Dynamic stretches move the joints through their full range of motion while keeping the muscles warm and the heart rate raised, preparing the body for movement, whereas holding a static stretch does not raise heart rate and can let the muscles cool slightly.

Question 8

light continuous exercise gradually lowers heart rate and breathing rate rather than stopping suddenly, oe **B1**

this helps maintain blood flow/venous return while the body recovers, reducing the risk of dizziness/blood pooling and supporting waste-product removal, oe **B1**

Answer: A cool-down uses light continuous exercise to lower heart rate and breathing rate gradually rather than stopping suddenly, helping maintain blood flow and venous return while the body recovers.

Question 9

(a) blood lactate fell further with the active cool-down, from 8.0 to 2.0 mmol/l (a fall of 6.0), than with passive rest, 8.0 to 5.0 mmol/l (a fall of 3.0), by 20 minutes, oe **B1**

(a) at both time points shown, blood lactate concentration was lower after the active cool-down than after passive rest, oe **B1**

(a) Answer: Blood lactate fell faster and further with the active cool-down, dropping from 8.0 to 2.0 mmol/l (a fall of 6.0) by 20 minutes, compared with only 8.0 to 5.0 mmol/l (a fall of 3.0) with passive rest.

(b) light exercise keeps blood flowing without placing another high-intensity demand on the muscles, oe **B1**

(b) whereas another hard sprint effort would produce more lactate/keep heart rate very high, slowing the return towards resting levels, oe **B1**

(b) Answer: Light exercise maintains blood flow without adding another high-intensity demand. Another hard sprint effort would produce more lactate and keep heart rate very high, delaying recovery.

© Revision Library | revisionlibrary.co.uk